2000 Transportation Plan

TABLE OF CONTENTS

INTRODUCTION

Top ▲

This transportation plan provides detailed policies and priorities to maintain and develop a safe and efficient transportation infrastructure. A safe and efficient transportation network is a necessary component of serving the population and employment opportunities in Harford County. The primary purpose for this plan is to update the 1994 Transportation Plan due to the adoption and implementation of the 1996 Master Plan and 1996 Land Use Element Plan.

The 1994 Transportation plan addressed many of the policy changes the Country experienced over the previous decades. This plan will continue to incorporate the spirit of the 1990 Clean Air Act, The Transportation Equity Act For The 21st Century (TEA 21) and the 1992 Maryland State Planning Act. This plan will also address the essential elements of the Smart Growth legislation recently adopted by the Maryland State Legislature.

These important legislative acts independently impact transportation planning in Harford County. The most recent impact has been the Smart Growth initiative created by the State Legislation. This initiative charges local jurisdictions to manage their growth by allocating state capital funds within a defined growth boundary. These boundaries will become "priority funding areas" for state capital projects.

The Harford County 1996 Master Plan and the 1996 Land Use Element Plan incorporated the guiding principles for meeting the State's Visions and Smart Growth policies. The 1996 Master Plan formed the framework for the Transportation Plan by outlining the Guiding Principles for Harford County:

Quality of Life - Harford County is dedicated to achieving a high quality of life by providing superior educational facilities, a smoothly functioning transportation network, adequate community and public facilities, safe communities, the preservation of our resources, and an array of recreational

opportunities.

Stewardship of Our Resources - Harford County recognizes the value of our natural, historical, and cultural resources.

Growth Management - Harford County preserves its character by providing adequate locations for publicly-served development within a defined envelope. Thereby protecting the integrity and economic vitality of both the area within this Development Envelope and the rural area outside of the Development Envelope.

A Sound, Balanced, and Diversified Local Economy - The County actively supports established industrial, commercial, and agricultural enterprises while seeking to attract other businesses in order to broaden its economic base.

Commitment to Communities - Harford County is dedicated to providing a forum for a broad spectrum of local viewpoints on such matters as land use, zoning, budget decisions, and current development and for strengthening individual community identities.

Coordination Among Agencies - Harford County actively pursues a policy of cooperation among agencies, which ultimately results in streamlining government processes, reducing conflicts, and achieving regulatory consistency.

Harford County, as a part of the Baltimore Metropolitan region, recognizes regional demographic change and is committed to providing an efficient, economical and environmentally sound transportation system for its citizens and the region. The Baltimore Metropolitan Council, this region's Metropolitan Planning Organization, completed a long range Transportation Plan in accordance with Federal legislation. Harford County's Transportation Element and the Region's long range plan are consistent in philosophy as well as strategy. One of the major aspects between the Regional Long Range Transportation Plan and this transportation element is the importance of coordinating land use and transportation facilities.

The transportation system in the County, like many other communities, has shaped the development pattern that is present today. The 1977 Comprehensive Plan, the 1988 and 1996 Land Use Element plans attempted and succeeded, to a large extent, to direct development where public facilities, including roads, can be provided.

The population in Harford County has grown from 52,000 in 1950 to the present population of 223,836. Since 1990, the County's population has increased by 23%. The 1977 Comprehensive Plan, 1988, and 1996 Land Use Plans have helped direct 81% of the growth into the identified Development Envelope. The 1996 Land Use Element plan continues to direct growth into the identified growth boundary. The Development Envelope is projected to direct 82% of all new growth in the county. These areas have a fairly efficient road and highway system. However, transportation facilities have continually been challenged to keep pace with the increasing transportation needs of the County's growing suburban population, particularly within the designated development areas.

Major new construction, include MD 24, MD 22, and the reconstruction of existing interchanges at MD Routes 24 and 152 with I-95 are some of the recent highway improvements in the County. Additionally, MARC train, commuter bus services and intra-county bus systems are important aspects of transportation system improvements for Harford County over the past decade.

The 1996 Land Use Element Plan focuses on strategies to integrate adequate public facilities with land use. The goals and objectives stated in the 1996 Land Use Plan are the driving force for developing the Transportation Element of the Master Plan. The goals, objectives and recommendations stated for each mode of transportation are the methods and actions to be taken to achieve and sustain a complete, safe and efficient multi-modal transportation system.

As Harford County moves into the next century, residents must change their driving habits to conform to the requirements of new legislation. Individuals need to carpool, vanpool or utilize public transportation to places of employment rather than commuting alone. In addition, alternate modes of transportation must be enhanced. Alternatives such as High Occupancy Vehicle facilities, bikeways, walkways and safe pedestrian access will help to reduce work and non-work related trips. Enhancement of these facilities will not only reduce congestion, but also increase our air quality.

LAND USE AND TRANSPORTATION

Top ▲

The 1996 Land Use Plan clearly defines and establishes the growth pattern within Harford County. The goals, objectives and recommendations of the Transportation Element of the Master Plan are consistent with those of the 1996 Land Use Plan. However, it is the relationship between land use and transportation systems which determines the success of directing development within appropriate areas. The availability of transportation corridors within the "T" shaped development area that originally provided the basis for the location and allocation of subsequent growth in the planned development area.

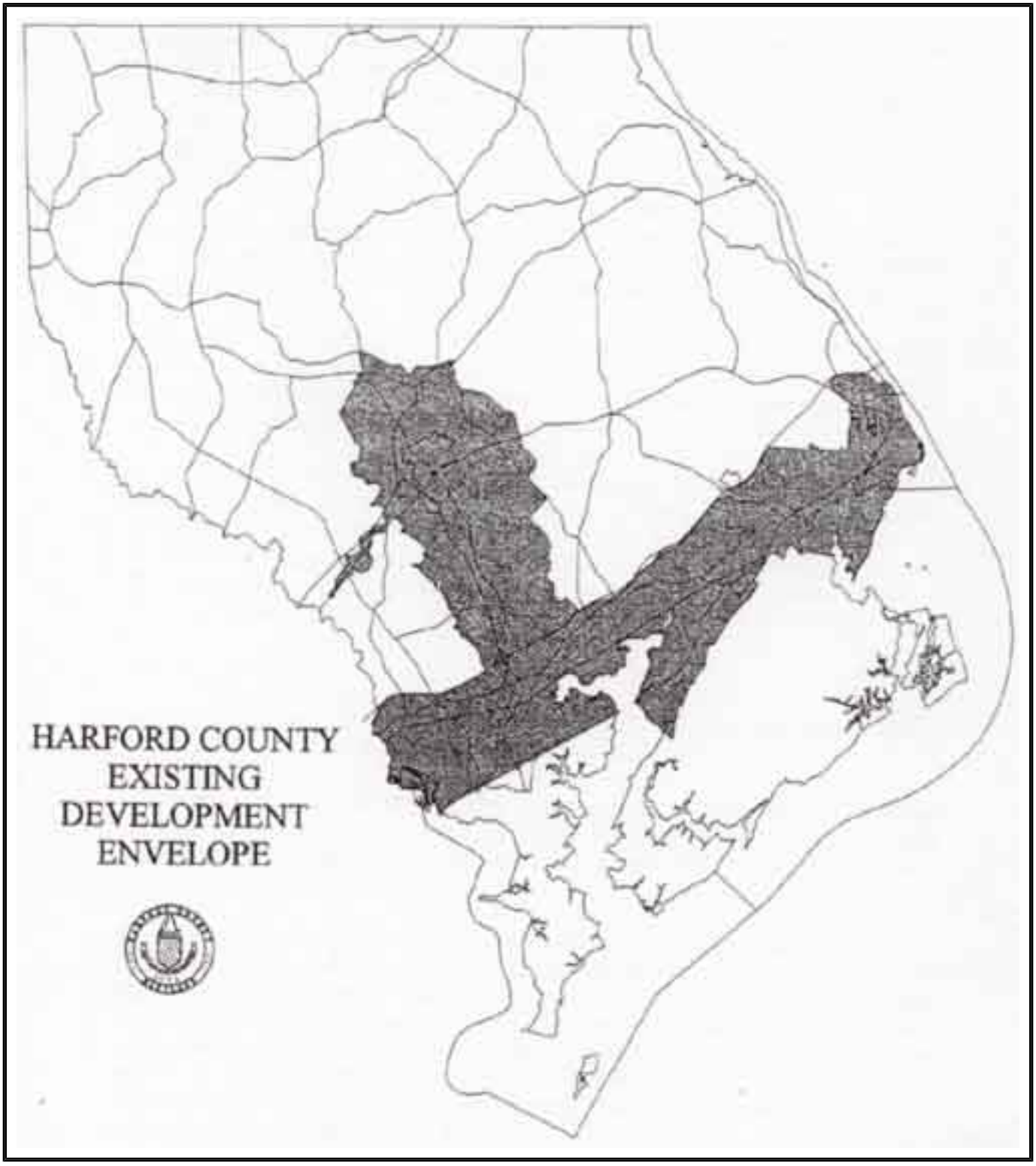
The 1996 Land Use Element Plan was modified to include Mixed Office uses at the Interchanges of MD 543 and I-95, MD 22, and I-95. A large area of the Perryman Peninsula was also modified from Low Residential to Industrial/Employment. These changes to the Land Use plan require a commitment from the Transportation Plan to accommodate the impact to the transportation network in Harford County.

Coordinating land use and transportation is necessary to establish an effective and efficient transportation system. The goal outlined in the 1996 Land Use Element Plan for transportation is to "maintain a safe and adequate transportation system to serve existing and future populations." This can only be accomplished through a coordinated, multi-modal transportation system which is designed to preserve and protect communities and the environment.

One of the most effective means of coordinating land use and transportation is the creation of a balanced variety of densities that promotes the use of multi-occupant vehicles, either private

carpooling or public transit. The diversification of transportation alternatives among existing transportation facilities within growth areas is the most effective use of a transportation network.

The growth in population, and a corresponding increased level of development in the past decade, has transformed Harford County from a rural-oriented to a fast-growing, suburban community in the Baltimore Metropolitan region. The County's population and economic growth has historically been tied to the farming industry. Today many residents of Harford County travel south to the U.S. 40 corridor and Baltimore for their employment.



HIGHWAYS

Top ▲

This section of the Transportation Plan identifies the role in which highways function in the overall transportation network. Development areas in Harford County surround major transportation facilities, such as I-95 and MD 24. Since the 1977 Comprehensive Plan, these two corridors have served to form what is presently known as the Development Envelope. Based on planned development patterns in the Development Envelope and the proposed highway network identified in this plan, Harford County is prepared for the future.

Multiple factors and variables mold and create the strategies used to prepare and plan for the County's future highway network. The strategies presented form the basis for a series of recommendations for action to maintain and improve the County's intersections.

Level of Service is a set of operational conditions describing the ability of a road or intersection to accommodate traffic. Level of Service standards will be enforced through the Adequate Public Facilities regulations in order to maintain an effective transportation network. A general definition of each Level of Service is provided in the Appendix.

An assessment of capital projects needed to accommodate future growth is essential. Utilizing a transportation gravity model to project growth in travel demand throughout the County based on planned levels of growth is the most important tool in assessing the impact of traffic growth in the County. This transportation model identifies roadways where the volume of traffic will exceed the capacity of the roadway. Continual utilization of this model will enable the County to update and identify future capital needs.

Although the Rural Plan and Land Use Plan direct development away from agricultural areas, there are many vehicles that travel in a suburban to suburban pattern. This travel pattern utilizes rural roadways and highways, therefore, it is important to maintain and provide for the safe and efficient movement of vehicles.

Limiting the number of conflicting turning movements and providing connections between compatible land uses also increase the safety and efficient movement of vehicles. Access management on arterial roadways and inter-parcel connections are among the many tools utilized in obtaining this objective.

The automobile is the major mode of transportation used in the County. However, walking and bicycling is becoming a more attractive transportation alternative. The federal legislation on intermodalism (TEA 21) specifically identifies a funding mechanism for these alternative means of transportation. TEA 21 funding mandates that States set aside 10 percent of the Federal transportation funds for enhancement projects. This creates an avenue for pedestrian and bikeway facilities to be considered when submitting highway capital projects not only for recreational aspects, but also from a total transportation option, including commuting.

Monitoring and applying growth management techniques allows the County infrastructure to keep pace with development activity. Legislative planning tools improve the process by forcing development to coincide with the capital improvements. Utilizing the Adequate Public Facilities Ordinance or Transportation Control Measures (TCM) will help alleviate the impact of new and existing development on the roadway system. Transportation Control Measures include organizing carpools, vanpools, sharing parking costs, and other ridesharing incentives. A Transportation System Management Plan (TSM) is a plan and program that creates the policy guidelines in setting up ridesharing practices and organizations such as Transportation Management Associations (TMA's). Other control measures used to minimize the impact of roadway congestion include innovative technologies such as Intelligent Vehicle Highway Systems which include for example, sequencing signals and alerting en route drivers beforehand of traffic delays.

Maintaining and improving the highway network is an expensive task. Funding for the roadway network is one of the biggest obstacles that has to be overcome. Therefore, it is important to utilize and search out various methods and sources to fund and control the escalating costs of highway capital improvement projects. The ability to expedite the startup of construction on capital projects, such as improved approaches to right of way acquisition, would be a method of controlling these costs.

Environmental, physical and/or financial constraints may preclude the achievement all desirable improvements to the County's highway network. For example, the Clean Air Act Amendments of 1990 mandate alternatives such as Transportation Control Measures to road building. Thus, the planning and implementation of feasible alternative solutions must be vigorously pursued. In addition, noise pollution and the surrounding land uses along roadways should be considered in the construction and/or upgrades of roadways that have a high volume of traffic.

Functional Classification

Functional classification is the process by which all roads and streets are identified based on how efficiently they serve the overall channelization of traffic within a network. It is important to note that the hierarchy of roads relates directly to the hierarchy of travel distance and volume. This hierarchy of roadway systems will be further refined to distinguish rural and urban travel.

A network of roads and streets play a dual role, first access to property and secondly for travel and mobility. The functional classification is determined by the role that each road plays such as providing access to property or mobility. Functional classification also provides information concerning design, access management, typical lane configuration, intersection spacing, land use orientation and bicycle and pedestrian facility requirements.

The roadway functional classification is shown on the following map and on Table 1. The definition of each classification is also identified in the Appendix. Harford County will coordinate with the Maryland State Highway Administration to ensure the functional classification of roadways is consistent with State plans. This plan shall serve as a conceptual basis for planning, design, engineering and construction of the roadways in Harford County.

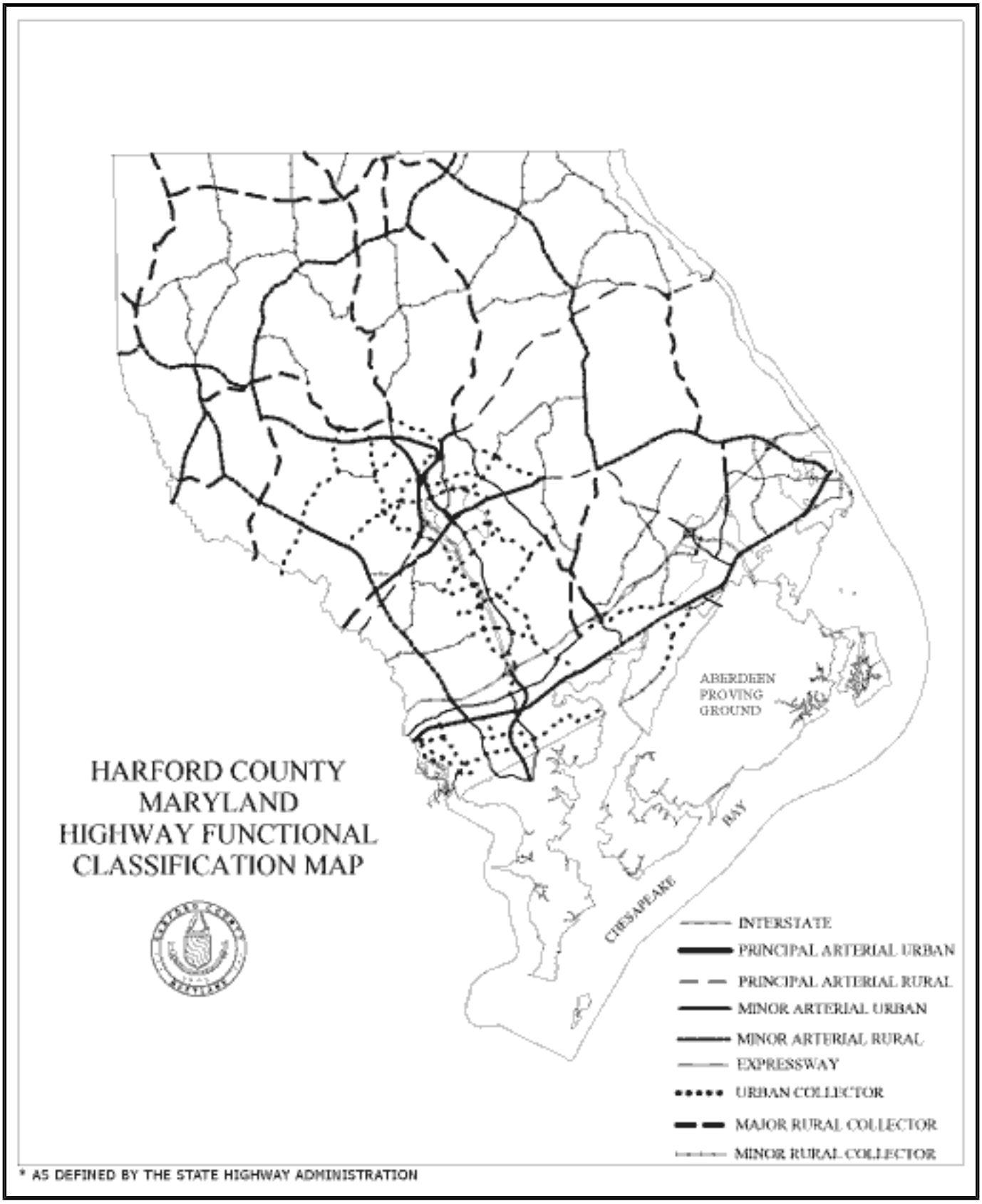


Table 1
FUNCTIONAL CLASSIFICATION

INTERSTATE

Limits

Route	From	To
I-95 (John F. Kennedy Highway)	Baltimore County	Cecil County

PRINCIPAL ARTERIAL - URBAN

Limits

Route	From	To
MD 22	U.S. 1 (Business)	Shucks Road
MD 23	High Point Road	U.S. 1
MD 24	MD 23	U.S. 1 Bypass
MD 24	I-95	Edgewood (APG)
MD 924	U.S. 1 (Bypass)	U.S. 1 (Business)
MD 152	Pleasantville Road	Connelly Road
MD 152	I-95	U.S. 40
MD 155	Havre de Grace City Limits	U.S. 40
New Facility	U.S. 1	MD 543
U.S. 1 (Business)	Winters Run	MD 24
U.S. 1	U.S. 1 Bypass	MD 543
U.S. 1 (Bypass)	Winters Run	U.S. 1 (Business)
U.S. 40	Baltimore County	Bush River
U.S. 40	MD 7	Old Robin Hood Road
U.S. 40	Have de Grace City Limits	Cecil County

PRINCIPAL ARTERIAL - RURAL

Limits

Route	From	To
MD 22	Shucks Road	I-95
U.S. 1	Baltimore County	MD 147

U.S. 1	MD 543	Cecil County
U.S. 1 Bypass	Winters Run	MD 147

MINOR ARTERIAL - URBAN

Limits

Rural	**From**	**To**
MD 7	Baltimore County	MD136
MD 24	Jarrettsville Road	MD 23
MD 152	U.S. 40	Edgewood APG
MD 543 (Riverside Pkwy)	I-95	U.S. 40
MD 543	U.S. 1	Wheel Road
MD 755	MD 7	Edgewood APG
MD 763 (Superior St)	Juniata Street	MD 155
MD 924	U.S. 1	MD 24
MD 715	U.S. 40	APG (Aberdeen)
MD 132	U.S. 40	I-95 ramp
MD 462 (Paradise Road)	Old Robin hood Road	MD 132
U.S. 1 (Business)	Broadway Avenue	U.S. 1 Bypass

MINOR ARTERIAL - RURAL

Limits

Rural	**From**	**To**
MD 23	MD 138	MD 165
MD 23	MD 165	High Point Road
MD 136	MD 165	MD 22
MD 138	MD 23	Baltimore County
MD 146	MD 23	Baltimore County
MD 152	MD 146	Pleasantville Road
MD 152	Connelly Road	I-95
MD 155	MD 22	Havre de Grace City Limits
MD 165	MD 23	PA State line
U.S. 1 (Business)	MD 147	Winters Run
U.S. 40	Bush River	MD 7

U.S. 40	Aberdeen City Limits	Havre de Grace City Limits

FREEWAY/EXPRESSWAY

Limits

Rout	From	To
MD 22	I-95	APG
MD 24	U.S. 1 Bypass	I-95

COLLECTORS - URBAN

Limits

Route	From	To
Abingdon Road	MD 924	U.S. 40
Bel Air South Pkwy	MD 924	Tollgate Road
Brierhill Drive	MD 22	MacPhail Road
Bynum Road	U.S. 1	MD 24
Carrs Mill Road	Grafton Shop Road	MD 152
Forest Valley Drive	MD 24	Bernadette Drive
Grafton Shop Road	Jarrettsville Road	Red Pump Road
Hanson Road	MD 152	MD 755
Henderson Road	MD 543	North Avenue
High Point Road	Jarrettsville Road	Pleasantville Road
Jarrettsville Road	MD 24	U.S. 1
Joppa Road	MD 7	Trimble Road
Joppa Farm Road	U.S. 40	Haverhill Road
Laural Bush Road	MD 924	Abingdon Road
MacPhail Road	MD 924	Wheel Road
MD 7	MD 136	U.S. 40
MD 159 (Perryman Road)	MD 7	Canning House Road
MD 755	MD 24	MD 7
Moores Mill Road	MD 22	MD 924
New Facility	Perryman Area	I-95
New Facility	Michaelsville Road	MD 715
New Facility	U.S. 40 @ Mitchell	Canning House Road
New Facility	Joppa Farm Road	Fort Hoyle Road

Osborne Parkway	MD 24	Grafton Shop Road
Pleasantville Road	High Point Road	Baltimore Co. Line
Plumtree Road	MD 924	Tollgate Road
Prospect Mill road	MD 22	MD 543
Red Pump Road	MD 24	Tollgate Road
E. Ring Factory Road	MacPhail Road	MD 924
W. Ring Factory Road	MD 924	Whitaker Mill Road
Singer Road	MD 924	Winters Run
Southampton Road	MD 543	Moores Mill Road
Thomas Run Road	Prospect Mill Road	MD 543
Tollgate Road	Red Pump Road	MD 24
Town Center Drive	Joppa Farm Road	Townewood Drive
Shore Drive	Joppa Farm Road	Towne Center Drive
Spesutia Road	U.S. 40	MD 159
Trimble Road	Joppa Farm Road	MD 755

URBAN COLLECTORS (CONTINUED)

Limits

Route	**From**	**To**
Vale Road	MD 924	Grafton Shop Road
Wheel Road	Shucks Road	Deadora Drive
Willoughby Beach Road	Trimble Road	Bush River
Woodbridge Center Way	U.S. 40	Hanson Road
Woodsdale Road	MD 24	End

MAJOR COLLECTORS - RURAL

Limits

Route	**From**	**To**
Hess Road	MD 146	MD 152
Jarrettsville Road	MD 24	MD 165/23
MD 23	MD 138	PA State Line
MD 24	PA State Line	Old Jarrettsville Road
MD 136	MD 23	MD 165
MD 136	MD 22	MD 7
MD 147 (Harford Road)	Baltimore County	U.S. 1

MD 161	U.S. 1	MD 155
MD 165	Baltimore County	MD 23
MD 439	Baltimore County	MD 23
MD 462	MD 155	Old Robin Hood Road
MD 543	Wheel Road	MD 7
MD 543	MD 165	U.S. 1
MD 624 (Graceton Road)	PA State Line	MD 165
Schuster Road	MD 146	MD 23

MINOR COLLECTORS - RURAL

Limits

Route	**From**	**To**
Boggs Road	High Point Road	Grafton Shop Road
Bradenbaugh Road	MD 23	Madonna Road
Bush Chapel Road	MD 132	Stepney Road
Carea Road	PA State Line	MD 136
Carsins Run Road	MD 156	MD 543
Castleton Road	MD 623	MD 440
Chapel Road	HDG City Limits	MD 462
Cherry Hill Road	MD 543	MD 24
Cool Spring Road	MD 136	Thomas Run Road
Constitution Road	PA State Line	MD 24
Deep Run Road	MD 623	Prospect Road
Earlton Road	MD 155	Chapel Road
Fawn Grove Road	PA State Line	MD 165
Grier Nursery Road	MD 165	MD 24
Harford Creamery Road	Bradenbaugh Road	Madonna Road
Hess Road	MD 146	Baltimore County Line
Jerrys Road	Madonna Road	Fawn Grove Road
Jerusalem Road	MD 152	Baltimore County Line
Madonna Road	Bradenbaugh Road	MD 23
MD 159 (Perryman Road)	Canning House Road	Bush River
MD 440 (Dublin Road)	U.S. 1	MD 543
MD 623	PA State Line	U.S. 1
MD 646 (Prospect)	MD 136	MD 543

Old Federal Hill Road	Jarrettsville Road	MD 165
Old Joppa Road	U.S. 1 (Business)	MD 152
Old Pylesville Road	PA State Line	MD 136
Prospect Road	MD 136	PA State Line
Robin Hood Road	Chapel Road	U.S. 40
Shucks Road	MD 22	MD 136
Singer Road	Winters Run	MD 152
St. Clair Bridge Road	MD 24	MD 165
Stepney Road	MD 22	MD 7
Thomas Run Road	Prospect Mill Road	MD 22
Whitaker Mill Road	Ring Factory Road	U.S. 1

Future Highway Improvements

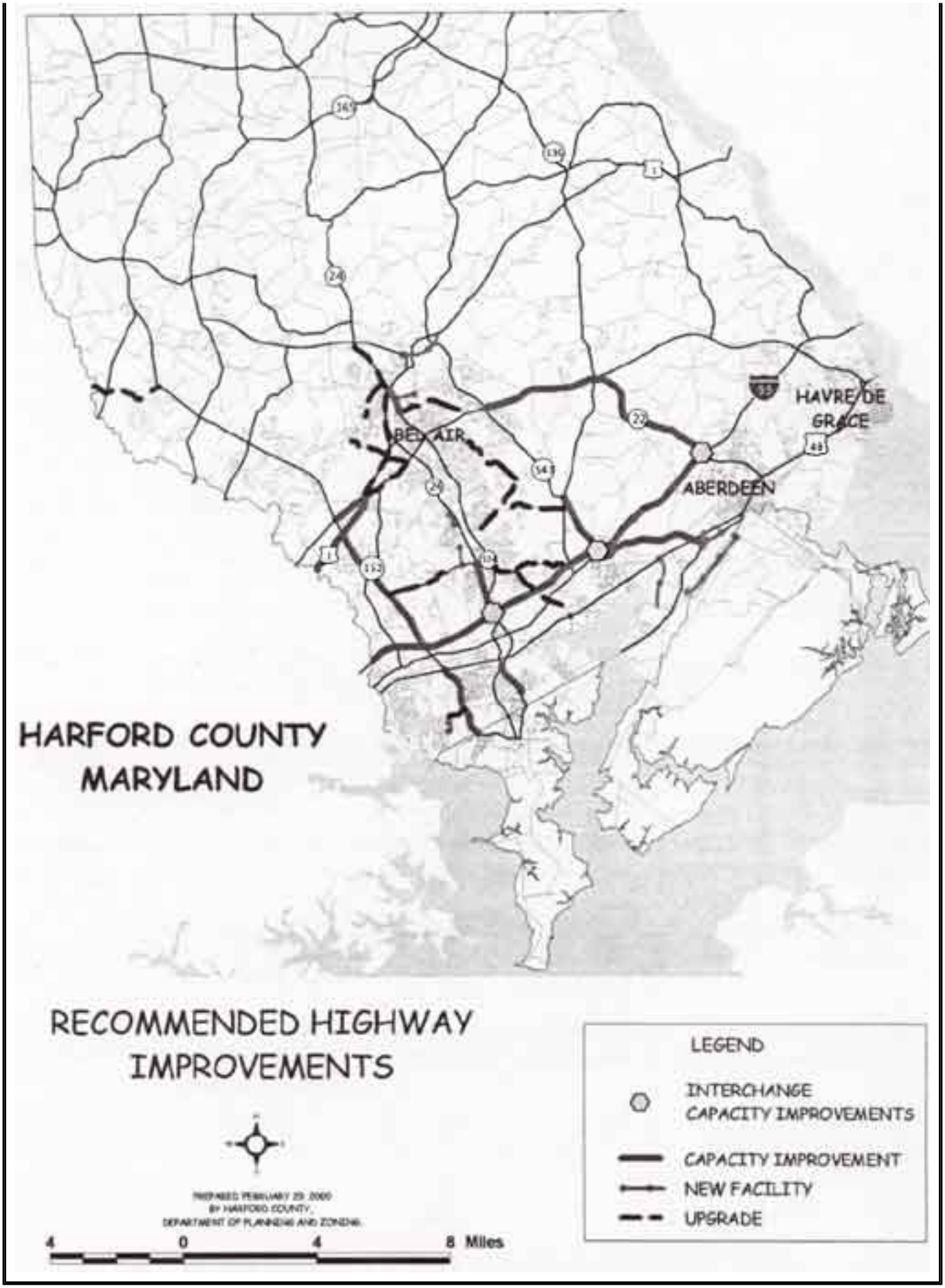
This plan illustrates the foundation for future roadway improvements based on the level of growth to the year 2015. The priority highway improvements are a compilation of the policy and a technical ranking system. The priority improvement list updates road improvements that are consistent with long range transportation plans, the Consolidated Transportation Plan, and the Transportation Improvement Plan. The highway improvement list is a reflection of major capacity increases and not rehabilitation of existing facilities. The improvements demonstrate where and to what extent the thoroughfare system should be improved to accommodate the traffic increase as the result of long range land use policies. The funding mechanisms for all of the projects are a combination of Federal funds (TEA 21), State funds (Consolidation Transportation Program) and local funds that represent attainable levels to complete projects. The recommended highway improvements are reflected in Map 3 and Table 2.

Table 2
PRIORITY HIGHWAY IMPROVEMENTS

Project	From	To	Improvement	Cost (million)	Priority
U.S. 1 (Hickory Bypass)	U.S. 1	MD 543	0 to 4 lanes	30.8	high
U.S. 1 Bypass	MD 147	MD 924	2 to 4 lanes	44.0	high
I- 95 interchange	@ MD 24		capacity improvements	25.0	high
I-95 interchange	@ MD 543		capacity improvements	15.0	high

I-95 interchange	@ MD 22		capacity improvements	15.0	high
MD 24	I-95	Singer Road	4 to 6 lanes	10.9	high
MD 24	Moores Mill Road	MD 23	2 to 4 lanes	18.3	high
MD 543	I-95	MD 136	2 to 4 lanes	8.1	high
Abingdon/ Singer Rds.	MD 924	U.S. 40	2 to 2 lanes upgrade	2.2	high
Tollgate Rd.	Singer Rd.	Improved Section	0 to 2 lanes	2.3	high
Tollgate Rd.	Plumtree Rd	Bel Air S. Pkwy	0 to 2 lanes	1.8	high
MD 159 Relocated	present terminus	MD 7	0 to 2 lanes	9.0	high
North Avenue	MD 24	U.S.1	0 to 2 lanes	3.2	high
Moores Mill Road	MD 924	MD 22	2 or 2 lane upgrade	13.7	high
Tollgate Road	U.S.1	Carrs Mill Road	2 to 2 lane upgrade	13.2	high
Wheel Road	Laurel Bush	Fairway Drive	2 to2 lane upgrade	10.8	high
Macphail Road	Breirhill Road	Wheel Road	2 to 2 lane upgrade	12.0	high
Cedar Lane	Cedarday Drive	MD 136	2 to 2 lane upgrade	9.6	high
U.S. 1 (Business)	MD 152	MD 147	4 to 5 lanes	15.0	medium
U.S. 1	MD 152	Baltimore Co. Line	4 to 6 lanes	8.7	medium
U.S. 1 (Business)	MD 147	MD 24	3 or 4 to 5 lanes	24.0	medium
I-95	Balt. Co. Line	MD 24	HOV 2+ lane in each dir.	25.5	medium
I-95	MD 24	MD 22	6 to 8 lanes	85.0	medium
MD 152	U.S. 40	Edgewood Arsenal	2 to 4 lanes	16.1	medium
MD 152	U.S. 1	I-95	2 to 4 lanes	29.2	medium
MD 755	MD 24	Willoughby Beach Rd.	2 to 4 lanes	5.26	medium
MD 147	U.S. 1	MD 152	2 to 4 lanes	5.0	medium
MD 7	MD 543	MD 159	2 to 4 lanes	38.8	medium
Hess Rd.	MD 152	Baltimore County line	2 to 2 lanes upgrade	2.56	medium
New Facility(1)	Michaelsville Rd.	MD 715	0 to 2 lanes	11.7	medium

New Facility(2)	U.S. 40 @ Mitchell	Canning House	0 to 4 lanes	11.1	medium
New Facility - bridge(3)	New Facility #2	east of RR tracks	0 to 4 lanes	6.0	medium
Red Pump Road	MD 24	Vale Road	2 to 2 lanes upgrade	7.2	medium
Perryman Access Roadway	Perryman Area	I -95	0 to 2 lanes	13.9	medium
Singer Road	Winter Run	MD 152	2 to 2 lane upgrade	10.8	medium
Hookers Mill Road	Laurel Bush	MD 136	2 to 2 lane upgrade	10.8	medium
Trimble Road	MD 152	P & C Quarry	2 to 2 lane upgrade	6.0	medium
Joppa Farm Road	present terminus	Fort Hoyle Road	0 to 2 lanes	1.4	medium
MD 22	MD 543	I-95	2 to 4 lanes	37.2	low


HARFORD COUNTY
MARYLAND
HAVRE DE GRACE
BEL AIR
ABERDEEN
RECOMMENDED HIGHWAY IMPROVEMENTS
LEGEND
INTERCHANGE CAPACITY IMPROVEMENTS
CAPACITY IMPROVEMENT
NEW FACILITY
UPGRADE
4 0 4 8 Miles

Goal: Achieve and sustain a complete, safe and efficient roadway network which recognizes current needs, provides for future travel demand, supports compatible land uses, and protects the environment.

Objective: Modify and improve the system which determines prioritization, timing, location, and the scale of road improvements.

Recommendations: Monitor the adequacy of roadways by continuously updating the County's transportation forecasting model and roadway inventory analysis in the development envelope.

Evaluate and inventory speed limit, signage, markings, height and weight restrictions on rural highways, and if necessary, adjust/improve to correct deficiencies and maintain low volume of traffic for safe and efficient movement of farm machinery as well as regular traffic.

Incorporate pedestrian/bicycle facilities in the design, reconstruction or construction of roadway systems when deemed appropriate.

Adopt new provisions in the County's development regulations and Road Code to manage access and access spacing for principal/minor arterial and major/ minor collector roads and provide for efficient inter-parcel connectors between compatible land uses.

Ensure that roadway improvements take into consideration their relationship to community in terms of location, scale and timing of construction.

Objective: Explore and promote innovative funding and coordination mechanisms with State, municipalities and private sector to provide an adequate, safe, and environmentally sound transportation system.

Recommendations: Modify and improve existing programs for effective public/private partnership in right-of-way acquisition and funding of planned roadway construction and improvements.

Coordinate transportation planning and improvement at Federal, State and local levels and actively participate in Baltimore Metropolitan Council Committees on transportation planning issues.

Coordinate and utilize environmental plans, programs, and regulations to minimize adverse impact of road construction and improvements on the County's environmental and cultural resources.

NON-MOTORIZED TRANSPORTATION

Top ▲

The non-motorized transportation component consists of two modes of transportation pedestrian and bicycle. The non-motorized component responds to the 1996 Master Plan and 1996 Land Use Plan objective of building and sustaining a functional multi-modal transportation system in Harford County. The refinement of Harford County's pedestrian and bicycle component is important to encourage local trips as well as providing access to transit facilities and park and ride lots. In addition, a functional multi-modal system will serve as a method of addressing pollution and congestion by reducing single occupant vehicles on our roadways. Reducing pollutants namely ground level ozone, a component in urban smog, is important to the health of our communities. The Baltimore-Washington area is designated as a non-attainment area for ozone. The United States Environmental Protection Agency has issued strict air quality standards for ground level ozone. Ozone is created when emissions generated from power plants, industrial facilities, motorized vehicles, and gasoline powered equipment react in sunlight. Motor vehicles account for approximately 30% to 40% of the ozone pollution in the area. An increase in non-motorized trips will help the region meet conformity standards issued by the federal government.

The impact of non-motorized transportation will become increasingly important in a region where the predominate mode of transportation consists of single occupant vehicles. Bicycling and walking were once thought of as recreational activities instead of utilitarian modes of transportation. Today, pedestrians and cyclists have expanded non-motorized trip purposes to include work, shopping, and school trips. A recent survey conducted by the Federal Highway Administration indicated that bicycling and walking account for 6.4 percent of all trips made in the United States. As the practical benefits of walking and cycling are established in this country, policy must also advance to provide adequate and safe facilities for pedestrians, bicyclist, and motorists.

In 1991, The Federal Government established the Intermodal Surface Transportation Efficiency Act (ISTEA). The law provides for long range multi-modal planning with public interaction and involvement from local governments. In 1995, the Bicycle and Pedestrian Access 2000 bill was drafted and the Maryland Department of Transportation produced the Bicycle and Pedestrian Element Plan. Both documents include language concerning non-motorized facilities, safety, and educational programs for all citizens utilizing Maryland's roadways. In the Spring of 1998, the Transportation Equity Act For The 21st Century (TEA-21) was enacted. The TEA-21 legislation will continue to provide provisions to improve facilities and safety for bicyclists and pedestrians. The use of Transportation Enhancement funds was broadened and will be eligible for pedestrian walkway construction, safety, and educational activities. The TEA-21 legislation will also ensure consideration for bike and pedestrian transportation in the planning process and facility design.

Harford County has also continued to work closely with the Baltimore Metropolitan Council, the region's Metropolitan Planning Organization, in developing criteria for the Baltimore Region Transportation Plan (BRTP). A Regional Bicycle and Pedestrian Work Group, comprised of transportation professionals from local government agencies and local organizations was formed to assist in the process. In addition to assisting in the BRTP, the work group served to educate citizens on non-motorized practices and regional non-motorized efforts, and promoted bicycle and pedestrian

events in the region.

Bicycle

Bicycling as a mode of transportation has increased throughout the past two decades, though trip purposes have remained relatively constant over time. Social and recreational activities remain the primary trip purposes made by cyclists in the United States. More serious trip purposes such as commuting and shopping are less common due to several environmental and social factors. Some factors that influence utilitarian bicycle trip types are distances between residences and activity centers, infrastructure, and design factors that prevent direct paths or that may create conflicts with vehicular traffic. Generally, bicycle trips are more common in urban environments than in suburban areas where densities and sparse land development create barriers to bicyclists. The potential to increase bicycle trip rates are easily identified with the urban landscape, however, the frequency of bicycle usage is considerably less than expected.

Bicycle usage can be increased through roadway planning and design standards. In most cases, the planning and design of roadways to accommodate bicycle traffic does not require excessive design standards. Existing roadway widths and surface conditions are usually sufficient for the safe operation of bicycle traffic. Bicycle compatible roadways are roadways that permit the shared use of bicyclists and motorists but are not specifically designated for bicycle use. A well designed roadway reduces the risk of accidents and offers no additional liability to state and county highway officials.

Harford County promotes non-motorized modes of transportation in areas where infrastructure and larger populations can facilitate a successful bicycle network. The County has identified suitable bike and pedestrian paths through work with Community Councils, local municipalities, and the Regional Metropolitan Planning Organization. The promotion of bicycle facilities is also important in reducing traffic congestion and pollution in urban areas. Because the bicycle is used for transportation and recreational activities, bicycle facilities should be designed to accommodate interconnections between residential developments, schools, parks, commercial and industrial areas. The following table identifies possible bicycle/pedestrian paths to important meeting places and activity centers within the County. To determine other appropriate bicycle routes, Harford County is assisting the Baltimore Metropolitan Council (BMC) in developing a bicycle suitability study. The study is managed by the BMC and involves a cooperative effort among regional jurisdictions to supply data.

Signed Bicycle Locations

Route	From	To
Joppatowne		
Townewood Drive	Joppa Farm Road	Shore Drive
Route 24 Corridor		
Tollgate Road	Singer Road	Constant Friendship Business Park

Pedestrian

Harford County will continue to encourage pedestrian trips by fostering safe pedestrian facilities and eliminating obstacles impeding pedestrian movements. Pedestrian safe facilities are most important in residential areas in close proximity to schools, libraries, and other services industries. Existing provisions relating to pedestrian facilities are limited to state and county highway construction design and regulations. Although new developments are required to include sidewalks in development site plans, efforts should be made to include pedestrian connections between residential areas and activity centers. Integration of mass transit with elderly care facilities, the physically disabled, and lower economic neighborhoods is essential in creating a comprehensive approach to non-motorized transportation.

The benefits of walking for both functional and recreational trip purposes are evident in energy, environmental, and health savings. More obscure benefits of walking include an awareness of the community, the people, and the natural environment. The National Personal Transportation Survey illustrates a large potential for increased pedestrian trips in the United States. Forty percent of all trips are two miles or less and 53 percent of all people live less than two miles from public transportation routes. The number and frequency of pedestrian trips is directly related to the surrounding land use. According to the 1990 Census, a typical suburban shopping center may generate walking trips of only 3 percent where in an urban environment walking rates may exceed 90 percent.

General considerations regarding pedestrian facilities and their functions include the following:

- A large percentage of pedestrian activity occurs at intersections of business districts or in urban areas. Pedestrian facilities should be designed to provide pedestrian storage space and ample sight distance without interruption to pedestrians or vehicular traffic. This would preclude the use of poles, parking spaces, mail boxes, bus stop shelters, and planters near crosswalks. Preferably, intersections should be minimized to reduce pedestrian crossing distances and exposure to vehicular traffic.

- Generally, future pedestrian volumes are difficult to measure given that sidewalks are constructed where people walk. A more accurate measure for future pedestrian facilities is the surrounding development density. Residential streets and especially cul-de-sacs can accommodate extensive pedestrian traffic due to low volumes of vehicular traffic. Minor collector roads that perform important connections between residential developments and activity centers may also demonstrate a large potential for pedestrian traffic. Pedestrian traffic on major collector streets is usually limited to accessing transit routes or large commercial centers located on arterial roadways.

- Designing and planning communities that provide people with the opportunity to co-exist with the automobile creates an efficient and safe environment for the entire community. For example, linking the street network to buildings and recreational areas will create opportunities for walking and initiates interaction among people. Community interaction can also be

enhanced through reductions in street widths, pedestrian scaled lighting, clearly defined pedestrian edges, crosswalks, and appropriate side walk widths.

Table 3
Recommended Bikeway/Pedestrian Locations

Node	Connection
Aberdeen	Park and Ride/HEAT (MD 22) MARC Train Station City Hall Cal Ripkin Jr. Museum and Plaza Beards Hill Shopping Center
Bel Air	Harford Mall Tollgate Mall Bel Air Plaza Harford County Court House Liriodendron Mansion/Heavenly Waters Park Bel Air South Station Professional Center Festival at Bel Air Shopping Center MA/PA Trail connection
Edgewood	Edgewood Rec and Park (Trimble Rd) Greater Harford Industrial Park Edgewood Shopping Village Edgewood Plaza Edgewood MARC Station Flying Point Park
Havre De Grace	Park and Ride (MD 155) Millard E. Tydings Memorial Park North Park/McLhinney Park Susquehanna Lockhouse Museum Harford Memorial Hospital Masion-Dixion Trail connection
Joppatowne	Joppatowne Plaza Mariner Point Park Robert Copenhaver Park

Fallston

Youths Benefit
Fallston Recreation Complex
Fallston-Jarrettsville Library
Fallston Park and Ride
Fallston High/Middle School
Fallston Mall

GOAL: To implement a network of bicycle and pedestrian facilities in the County to enhance and promote non-motorized transportation.

Objective: Plan a contiguous network of bikeway and pedestrian facilities to connect adjacent residential, commercial, employment, recreational, and school sites within the Development Envelope and in coordination with the Town of Bel Air and the Cities of Aberdeen and Havre de Grace.

Recommendations: Create a bicycle/pedestrian task force to determine improvements and the need for facilities on all County roadways.

Conduct a specific analysis and develop a map of proposed locations, and identify access points, barriers, interruptions, intersections, bridges, and potential conflicts with motorized vehicles.

Provide bicycle parking facilities at public places.

Provide safe pedestrian crossings at selected locations with exclusive pedestrian right-of-way over vehicles and pedestrian refugee islands in the middle of undivided multi-lane streets.

Investigate and plan for options to provide connections during development plan reviews.

Investigate the possibility of shared bicycle and pedestrian use of certain pathways.

Assess the need for bicycle parking.

Objective: To promote the use of walkways and bicycling, explore options to improve the opportunity to walk or bike through location, attractiveness and security.

Recommendations: Coordinate with the Open Space and Recreation Plan Element to provide linkages to the recreational trails, bikeways in major parks, future greenways, linear parks and along abandoned railroad tracks.

Integrate bike and pedestrian facilities with Park & Ride lots and mass transit stops or stations.

Continue to involve the public to identify specific community needs in terms of bicycle and pedestrian facilities.

Investigate possibilities for alternative transportation facilities in conjunction with all county land acquisitions.

Consider revisions to the County's Development Regulations in order to provide for dedication, easement, or development of necessary walkways or trails in order to provide for a contiguous and safe non-motorized transportation system throughout the County.

Objective: Incorporate a review of possible bike and pedestrian facilities in the design and construction/reconstruction of roadways, especially within the Development Envelope.

Recommendations: Insure coordination with County review of highway construction by the State to insure necessary walkways and crossings along new roads or reconstruction of existing roads.

Coordinate and seek funding from the State for inclusion of bike and pedestrian facilities on arterial roadways in the County.

Continue to coordinate with the State and municipalities to retrofit sidewalks along existing roadways.

Utilize the Transit Oriented Design program to enhance pedestrian and bicycle access to bus stops and train stations.

AVIATION

Top ▲

Aviation as a mode of transportation continues to expand and remains important for an increasingly mobile population. Airspace in the Baltimore-Washington Metropolitan area has experienced heavy use by both commercial and aircarrier aircraft. In 1990, the total number of annual passengers boarding commercial airlines at the Baltimore-Washington International (BWI) Airport was 10.2 million passengers. The Maryland Aviation Administration projects that the BWI airport will accommodate 15.9 million passengers in the year 2000 and 18.9 million passengers will pass through BWI gates in the year 2005 (Maryland Department of Transportation). Dulles International Airport is expected to

have similar increases in total annual air travel. With increased air demand at major airports, such as BWI Airport and Dulles International Airport, the ability of regional airports to accommodate air travel by smaller aircraft will diminish. The role of local airparks will become significantly greater in the future by reducing demand on larger commercial airlines and consequently relieving congestion at major airports in our region.

Aviation in Harford County, is secondary to other modes of transportation such as the automobile, truck, and rail. The proximity of Interstate 95, AMTRAK, and CSX lines allows for easy access to major centers in and around the region. However, aviation does play an important role in the transfer of people, goods and materials and is vital to the economic development of Harford County. Airparks in the County are utilized by local businesses and industries as well as sport and recreational pilots.

As the population and employment base of Harford County continues to grow, the need for improved airpark facilities also increases. Harford County has three privately owned and operated airparks that currently serve the County. The following section identifies and describes the three privately owned airparks and Phillips Army Airfield located on the Aberdeen Proving Grounds. The assessment of each airpark will provide information to determine possible improvements and the potential for expanding airparks in the county.

Forest Hill Business Airpark

The privately owned Forest Hill Airpark is located along Jarrettsville Road between MD 24 and U.S. 1. The airpark is situated in central Harford County, approximately three miles northwest of Bel Air and one mile from Forest Hill. The closest town, Bel Air, is the county seat and has a population of 9,645. The airport is easily accessible to the surrounding population centers via MD 23, MD 24, and U.S. 1.

The 1996 Land Use Element Plan identifies the surrounding land use as industrial, commercial, and residential. An expansion of the airpark is severely limited by the surrounding infrastructure. Several buildings and hazardous material tanks are located within 70 feet of the runway. There are obstructions to the approaches in both directions of the runway and creates restrictions to public use. The Forest Hill Airpark would require extensive modifications to remove obstructions to the primary and transitional surfaces. Only after such modifications were completed could the airpark be licensed by the Maryland Aviation Administration for public use.

Fallston Airpark

The Fallston Airpark, a privately owned, public use facility is situated in the western portion of Harford County near the Baltimore County boundary. The airpark is located eight miles south of Jarrettsville and four miles west of the Town of Bel Air. Access to the site can be acquire by Reckord Road and MD 152. The site is also conveniently located near U.S. 1, MD 147, and Intestate 95.

The land area of the airpark is approximately 20 acres and facilitates one 2200 x 50 foot runway. The principle use serves the single-engine aircraft demand in the northern and western portions of the county. The airpark also provides minor aircraft repair, aircraft rentals, and a fueling area. In 1995, 42 single-engine aircraft were based at Fallston. The estimated growth in the number of based aircraft is

1% per year to approximately 51 aircraft by year 2015. The 1998 level of flight operations was 2,702 and the Maryland Aviation Administration forecasts flight operations to increase to 4,700 by year 2015.

The land use surrounding the Fallston Airpark is dominated by Agricultural /Agricultural Residential uses. A prominent characteristic of the landscape features a stream in the immediate area, however the stream does not impact the operation of the airpark. The airpark meets State standards and there are no man-made or natural hazards in proximity to the runway. There are no buildings beneath the approach and take-off patterns, therefore, excessive noise is not a concern.

The surrounding land use and the proximity of MD 152 offers the potential for this airpark to expand. However, the proximity of the airfield to the Baltimore County line, minimizes the access to major population centers to the south and eastern portions of the county.

Harford County Airpark (Aldino Airpark)

The Harford County Airpark is a privately owned facility located in the eastern part of the county. The airpark is centrally situated with regard to the major population centers in the county. The airpark is located three miles north of the city of Aberdeen, four miles west of Havre De Grace, and six miles east of Bel Air. The main thoroughfares in the vicinity of the airpark are MD 155 and MD 156 near Hopewell Road. The site is also located within three miles of the Interstate 95 and MD 22 interchange.

The land surrounding the airpark is agricultural residential. There are no obstructions in the flight path or hazards close to the airpark. The airpark is located outside the Philadelphia and Baltimore/ Washington International airport Class B-airspace and is not affected by Phillips airfield located at the Aberdeen Proving Ground. Currently, the Harford County airpark has a 2140 x 40 foot asphalt runway with low intensity runway lights and a 1600 foot turf runway. The airpark provides a fueling station, major aircraft repair, aircraft rentals, and flight instruction. In 1995, the Harford County Airpark was base for 55 aircraft. The majority of aircraft were single engine aircraft with some gliders, ultralights, and multi-engine aircraft. By the year 2015, the airpark is expected to increase to 64 aircraft. The 1995 level of aircraft operations was 18,300. Flight operations are estimated to increase to 25,000 by the year 2015.

The central location of this airpark to major population centers and to major roadways makes it a viable site for expansion. In addition, the surrounding zoning provides the adequate space void of obstructions to the flight path.

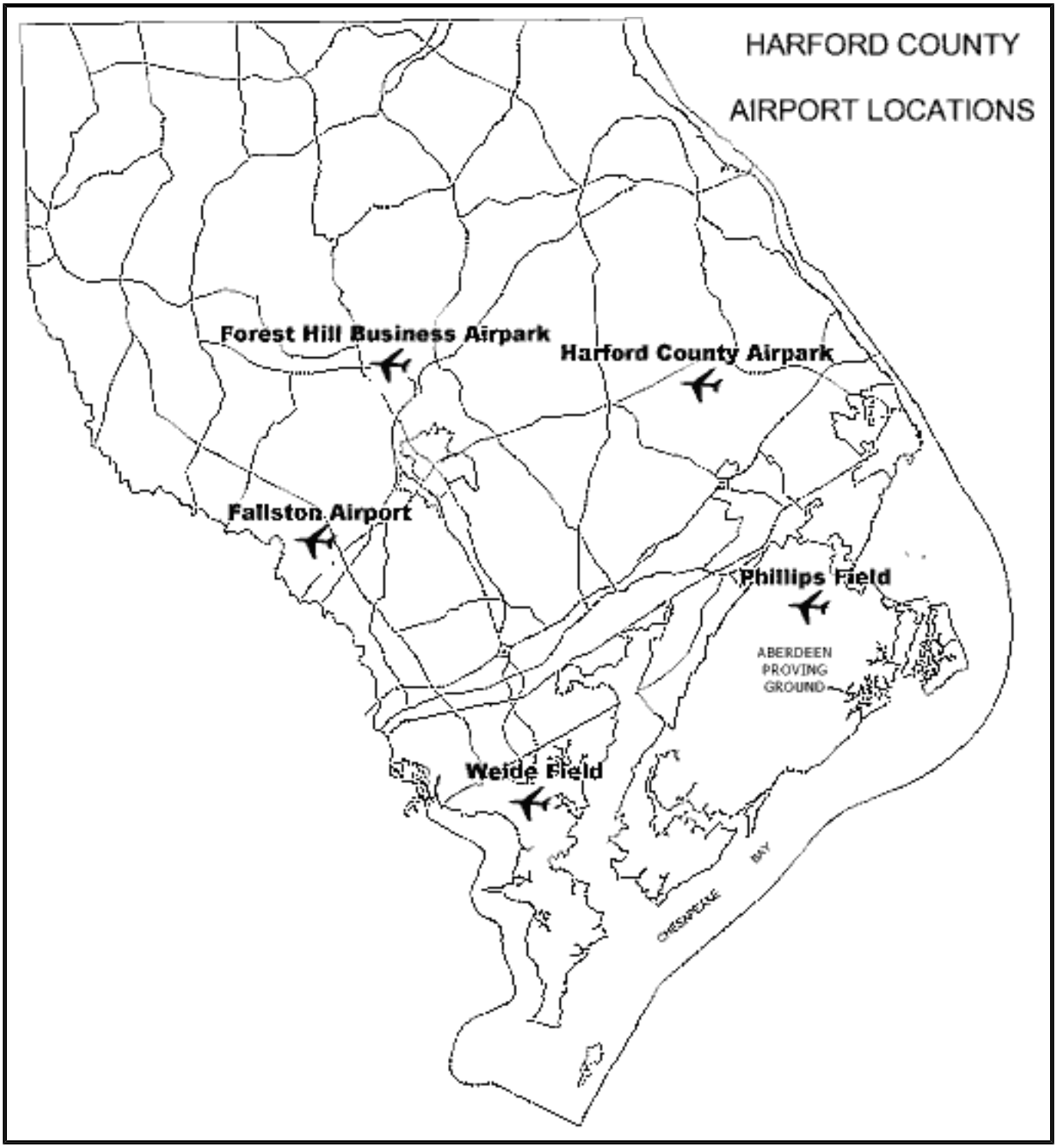
Phillips Army airfield (Aberdeen Proving Ground)

Phillips Army Airfield is a military airport that is located in the Aberdeen Proving Ground (APG) Military Base. The base is located in the southern most portion of the county and situated between the Bush River and the Chesapeake Bay. The nature of the area surrounding the airfield includes military installations and residential homes.

The airfield is primarily used for military purposes. Access to the airfield is limited due to military operations and to minor roads surrounding the field. Access roads leading to the airfield would require

major improvements for commercial use. Also, military installations and residential structures in the area partially restrict the flight path. Specifically, residential areas beneath the landing approach to runway 04/22 are impacted with noise levels exceeding normal standards. Although, the airfield lies outside the Baltimore/Washington International Airport class B airspace, radar guidance from BWI approach control is available over the entire county.

GOAL:	Enhance the economic viability of local airparks within Harford County and improve the accessibility to regional aviation facilities
Objective:	Improve the overall operation and level of service for airparks in Harford County.
Recommendations:	Evaluate the potential for public ownership and expansion of a privately owned airpark in the County.
	Propose, if deemed appropriate, limited low density residential and non-residential development in the vicinity of airports and construction of obstructions into navigable airspace to ensure viability of airport and enhance economic development in the County.
	Continue to encourage and provide technical assistance to implement plans for the potential joint use of Phillips Army Airfield.
	Evaluate and formulate regulations to ensure compatible land use and development and provide for enforcement in the vicinity of airports to ensure safety and limit noise pollution.
Objective:	Support and prepare for the future growth in aviation facilities and air travel demand.
Recommendations:	Evaluate the need for express shuttle bus service between BWI and Harford County.
	Utilize available funding from Local and State governments to prepare a feasibility study and master plan for expansion of selected privately owned airports in the County in cooperation with the Maryland Aviation Administration.
	Consider financial support by the County to implement plans for a selected private airfield for expansion.



TRANSIT

Top ▲

Of the 85,000 County residents that commute to work everyday, most travel south to the large industrial parks along the Route 40 corridor or to Baltimore County and City. According to Baltimore Metropolitan Council and Harford County's estimates, approximately 40% to 55% of the daily commuters travel outside of the County with 1 percent of the commuters utilizing mass transit.

Harford County offers a wide array of Mass transit including inter- county and intra-county bus

services. The Harford County Transportation Service (HCTS) operates fixed bus routes that connect Joppatowne, Havre de Grace, Bel Air, Edgewood and Aberdeen. The HCTS also operates bus service for the Town of Bel Air and the City of Aberdeen. In addition, the State operates commuter bus routes from Bel Air and Havre de Grace to Downtown Baltimore. The State provides rail service to Harford County which extends to the Washington region. In addition, a commuter assistance/ridesharing program was established to administrate and promote carpooling and to expand and provide improved service for the commuting population in the region. Finally, the County offers a para-transit service for the elderly and to the special needs population.

Due to the land use characteristics in Harford County much of what can be done in terms of public transportation is limited to a small part of the County. Efforts are mostly concentrated in the Development Envelope (Route 24 and I-95 corridors).

The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) concentrates efforts toward alternative means of solving transportation issues rather than expanding highway capacity. This act allows State and Local governments more flexibility in terms of funding transportation solutions and the tools necessary to enhance planning and management systems. In addition, the newly enacted legislation entitled Transportation Equity Act for the 21st Century (TEA-21), builds on the initiatives established in ISTEA. The new legislation also provides for improving safety, protecting the environment, and advancing America's economic growth through efficient and flexible transportation. For example, the TEA-21 legislation will promote transit ridership by increasing tax-free employer-paid transit benefits from $65 to $100 per month.

Harford County's efforts to increase transit ridership and comply with the Clean Air Act Amendment are oriented toward the commuter and increasing the frequency of existing services. A series of surveys and planning studies were conducted to determine the need for future transit improvements. The surveys evaluated employers, employees, existing transit users and non-transit users on their interest of public transportation in the County. Harford County is also actively involved in the Mass Transit Administration's efforts to develop a Long Range Regional Transit Plan.

In Harford County a large percentage of employers and employment centers are located along the Route 40 corridor. Commuters travel to these employment centers from all over the region. Commuters who travel from Baltimore and communities to the south have a reverse commute because they are traveling in the opposite direction from the majority of the commuting population. The increase of employment opportunities in Harford County, especially along the Route 40 corridor and at Aberdeen Proving Grounds, necessitates a reverse commute option that would encourage and employees to work in the area.

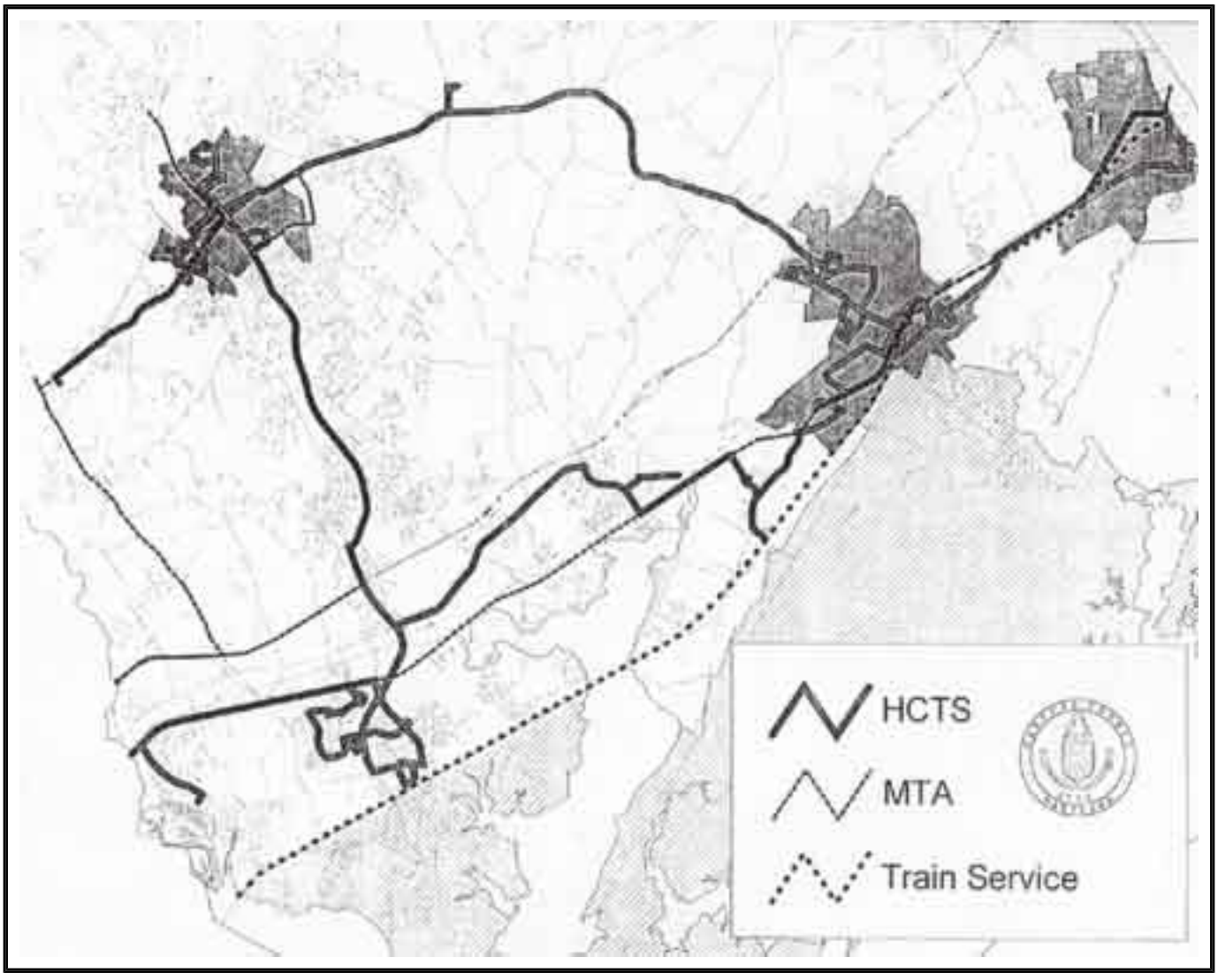
As the popularity of the local transit system increases, the purposes and utilization of the system will become varied and expanded. In order to accommodate diversified needs, exploration of enhancements and expansion of the existing system must be evaluated.

The recommendations and future improvements outlined in this plan are orientated towards providing a diversified local transit system. Additional bus runs on each route will provide enhancements to the existing system and providing new routes will expand the system to new communities. Please refer to

the following map.

FUTURE TRANSIT IMPROVEMENTS SUMMARY

PROJECT	IMPROVEMENTS
MTA Flyer 420	Reverse Commute at the peak hour.
ARC Train	One Mid-day service between Harford and Baltimore.
Feeder Bus	Bel Air to Edgewood (MARC Station) 3 runs during peak period.
Local Transit	HCTS Rt.1 - Joppatowne to Bel Air - Add additional bus HCTS Rt.2 - Havre de Grace to Bel Air - Add additional bus



GOAL: Enhance and improve multi-Occupant Vehicle opportunities in the County to provide service to more communities in order to reduce the need for automobile use and improve air quality.

Objective: Increase the ridership and utilization of transit in Harford County.

Recommendations: Increase the frequency of the Intra-County bus service.

Add bus routes to town to town services and provide feeder bus services from Bel Air and Aberdeen Proving Ground to MARC commuter train stations.

Increase MTA Flyer service to existing and future commuter parking facilities around the County.

Provide mid-morning/mid-afternoon, weekend and reverse MARC train services to Harford County from Washington D.C. and Baltimore.

Objective: Reduce the number of single occupant vehicles through transportation control measures to improve the efficiency of existing roadways.

Recommendations: Develop and implement a Transportation System Management (TSM)/ Transportation Demand Management (TDM) Plan and Program.

Increase the number of park and ride facilities convenient to residential areas and investigate the use of under utilized existing parking lots for commuter parking lots.

Increase the auto occupancy rate through aggressive marketing and participation in commuter awareness week; promotion of rideshare and transit use at all local events; and by assisting private firms to adopt plans for better rideshare and transit use.

Develop guaranteed ride home/free/preferred carpool parking programs and continue to utilize advanced technology for instant rideshare matching system.

Objective: Increase the efficiency and effectiveness of Harford County Transportation Service, including the paratransit alternatives.

Recommendations: Continue to maintain and implement the objectives stated in the American With Disabilities Act Plan for Harford County Transportation Services. Enhance mobility for dispersed transportation dependent population groups.

Institute a formal method of evaluating cost efficiencies and service effectiveness for

Harford County Transportation Services through peer comparisons and a route performance system.

Continue to working with the State in examining the farebox recovery mandate with other alternatives such as performance indicators and management audits

Continue to promote the utilization of transit opportunities and improve the Harford County Transportation Services to an Intra-County Transit System

which provides expanded service to more communities.

Investigate and implement alternative programs to fund public transportation services, including a special line item in the County's Budget for Harford County Transportation Services.

IMPLEMENTATION

Top ▲

This section of the plan identifies the "next steps" and actions in order to meet the goals and objectives outlined in the plan.

POLICY ACTIONS – The implementation of this plan relies on the approval of Administrative and/or Legislative actions to improve the efficiency and effectiveness of the transportation network.

- Redevelopment Program – Process and program development to revitalize older existing neighborhoods and provide incentives for investment and reinvestment through public and private funds.
- Edgewood Community Plan – Develop and implement a community plan that will incorporate mixed-use concepts that will reduce vehicle trips and enhance the efficiency of the existing transportation network.
- Access to Jobs – program to initiate a reverse commute transit service along the U.S. 40 corridor.

COMPREHENSIVE PLANNING – There are issues that will need further examination to define the most practical solution beyond the scope of this plan.

- Bicycle/Pedestrian Task Force – on going analysis and study to improve non-motorized transportation in Harford County.
- Perryman Transportation Study – complete study and analysis on the impacts to the transportation network based on the build out of the Perryman area.
- Transportation Sub Area Analysis – on going transportation analysis on regional transportation networks to evaluate impacts to land use changes.

REVISION AND UPDATES OF LOCAL REGULATIONS AND PROGRAMS – The current strategies and regulations to accommodate the existing transportation network have been reviewed as part of this Plan. Modifications and enhancements to these regulations and programs are necessary in order to maintain progress and economic strength within the County.

- Land Development Regulations – updates will occur as necessary for zoning code changes to coordinate land use and transportation efforts with smart growth initiatives.
- Capital Improvement Program – coordination efforts will have to be maintained between administrative policies and funding opportunities.

STATE AND FEDERAL LEGISLATIVE REQUIREMENTS – Local transportation efforts have been impacted by updated State and Federal regulations. These requirements are ongoing programs and projects that are mandated by State and Federal laws to meet regional objectives highlighted by the Clean Air Act and Transportation Efficiency Act of the 21st Century.

- Regional Long Range Transportation Plan – ongoing process that includes an updated plan every three years mandated by the Federal Government.
- Harford County Commuter Assistance Program – ongoing program that promotes carpooling and other mass transit opportunities within the County.
- Transportation Improvement Program – ongoing regional transportation capital funding program updated on a yearly basis.
- Transportation Enhancement Opportunities – ongoing effort to fund and improve alternative transportation projects.

APPENDIX

Top ▲

DEFINITIONS:
Functional Systems in Urban Areas

The nature and intensity of population density and development determines the characteristics of urbanized roadways.

INTERSTATE - A high -speed, limited access highway without interference over long distances that is intended to link large population centers. This classification is seen as a divided, arterial highway for through traffic movement with full control of access only at grade separated interchanges. Continuity of this system includes traversing through states and major cities. Spacing between interchanges in an urbanized area is typically one mile and five miles in rural areas.

PARKWAY - Acts as a major corridor between several communities and employment centers mostly in the urbanized areas. The appearance of a parkway is intended to be very scenic and environmentally sensitive, with formal landscaping. A parkway is not intended to provide direct access to individual properties or businesses. This roadway can support high volumes of traffic and is often designed as a fully controlled access highway. A parkway could include pedestrian and bicycle accommodations, an exclusive right-of-way, an extensive median configuration and skywalk facilities. A substantial right-of-way is required.

Source: Federal Highway Administration and AASHTO

URBAN PRINCIPAL ARTERIAL

Urban principal arterials have two categories: *Freeway and Expressways*

A divided highway, with either full control of access on which all cross roads and railroads are grade

separated. All entrance and exit maneuvers are by way of interchange ramps or partial control of access where a great distance between the intersections is provided and no direct access to abutting land between major intersections is allowed. Design speeds are lower or similar to interstate systems but, are generally higher than arterial highways.

Other Urban Principal Arterial

Links major centers of activity of a metropolitan area. Its primary function is for mobility and carries a high proportion of total trips entering, exiting, or passing through an urbanized area. It is not intended to provide direct access to individual properties along its path and such service should be purely incidental to the primary function of the road for use of through traffic.

URBAN MINOR ARTERIAL - Interconnects with and augments the urban principal arterial. It provides a lower level of travel and trip lengths as compared to principal arterials and serves intra-community continuity. Spacing between urban minor arterial vary from 1/8 - 1/2 miles in central business districts to 2-3 miles in the suburban areas. Although mobility is the primary function of this type of arterial system, it may provide limited access to major community centers along its path.

URBAN COLLECTOR - Provides both access to abutting land and circulation within neighborhoods and business areas. It serves residential, commercial, and industrial areas by collecting and distributing trips from local streets and channelizing it into arterials for reaching their final destination. The amount of access provided to abutting land is important and the length of collector streets are typically limited to 2 to 3 miles.

Functional Systems in Rural Areas

Rural roads consist of those outside of small urban and suburban areas.

RURAL PRINCIPAL ARTERIAL - Serves trips of substantial length which consist of the following characteristics:

1. Serves state wide or interstate travel;
2. Connects urban areas of 50,000 or more and;
3. Provides an integrated network without stub connections except where unusual Geographic conditions exist such as international boundary connections.

RURAL MINOR ARTERIAL - This roadway works in conjunction with rural principal arterials, and forms a network of rural roads which has the following characteristics.

1. Links cities, towns, and other major activity centers such as resort areas;
2. Serves the populated rural areas of the state and;
3. Provides mobility in the areas with minimum interference to through traffic.

RURAL MAJOR COLLECTOR - Provides service to towns that are not served by principal arterials.

Intra-county travel between centers of activity such as major parks and agricultural areas of farming communities are connected via this system. It provides access to arterials for one or more neighborhoods, providing direct connections to residential roads and other collectors, and has a limited amount of direct driveway access to abutting properties. These routes are spaced at intervals consistent with population density in which traffic is collected from local roads and channelled into a higher classified roadway to reach their destination in agricultural centers and towns. Also provides internal distribution within a rural neighborhood, or part of one, and has limited direct driveway access to abutting properties.

RURAL MINOR COLLECTOR - Provides access and service to neighborhoods, and direct access to residential, commercial, and industrial land use. The amount of access this type of road provides is important. The length of the minor collector road should remain limited to a few miles and create an efficient network to major collectors and arterials to effectively channel trips through the roadway network.

Harford County's Department of Public Works further categorizes local roads as business District Roads and Residential Roads.

Business District Roads:

A road that provides:

1. interconnection between highly developed commercial or industrial property to arterial roads,
2. access to individual properties comprising a commercial /industrial complex, and or
3. carries heavy volumes of truck traffic within or adjacent to any land which has been approved for any class of commercial or industrial use.

Residential Road Classifications

Residential roads shall be classified as Residential Collectors, Residential Sub-collectors, Residential Access Streets, and Town House Access Roads. The design standards for the classifications of the residential roads are based on the lot sizes of the developments and the amount of daily traffic the road is expected to carry.

RESIDENTIAL COLLECTOR
Residential collectors are streets that collect and distribute traffic between residential sub-collectors and provide the linkage to streets of a higher classification.

RESIDENTIAL SUB-COLLECTORS
Residential sub-collectors are local streets that provide frontage for residential lots and may carry some residential through traffic from access streets.

RESIDENTIAL ACCESS STREETS
Residential Access Streets provide frontage and access to residential lots.

TOWN HOUSE ACCESS
The design of Town House Access roads shall be determined by the number of units and the type of neighborhoods. Town house roads shall serve a maximum of seventy five (75) units.

Level of Service Standards:

Level of Service (LOS) is a set of operational conditions describing the ability of a roadway or intersection to accommodate traffic. Different scales are used to evaluate the efficiency of vehicular movement on a transportation facility. The LOS operation of a facility is measured by many factors, including speed, delay, freedom of maneuver, and frequency of traffic flow interruptions.

There are six established Levels of Service - A through F to measure the operational efficiency of a transportation facility. The following is a general definition of each Level of Service:

LOS A- A free flow of traffic with no restriction of significant delay.
LOS B - A stable flow of traffic with very little restriction or delay.
LOS C - A stable flow of traffic with low to moderate restriction or delay.
LOS D - Approaching unstable flow of traffic with moderate to heavy restriction and delay.
LOS E - Unstable flow of traffic with significant restriction and delay.
LOS F - Forced flow or cases of "Grid Lock". The flow rate drops significantly.

Source: Highway Capacity Manual Special Report 209, Transportation Research Board

Transportation Demand Management (TDM) - TDM programs are directed at increasing the efficiency of existing transportation systems by reducing single occupant vehicles, influencing the time or need to travel, thus reducing or deferring transportation capital projects. Strategies employed by a TDM program include alternative work schedules, ridesharing, parking management, congestion pricing, transit, land use zoning, and transportation reduction ordinances.

Transportation System Management (TSM) - TSM programs are directed toward long range transportation planning and technological innovation, emphasizing capital projects to solve transportation problems. TSM policies are largely associated with supply-side policy choices such as adding High Occupancy Vehicle lanes and synchronized traffic signals.